

INSECT PEST SURVEY BULLETIN

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THE MORE IMPORTANT RECORDS FOR OCTOBER, 1932

In the Gulf region Schistocerca americana Drury appeared in very unusual numbers.

White grub injury in parts of New England, the Middle Atlantic, and the Central States continued well into October. Serious damage to potatoes has been reported from Vermont, and to rye and wheat in parts of Nebraska.

In southern Illinois, parts of Iowa, Missouri, and Oklahoma, the chinch bug is entering hibernation in large numbers, indicating possible trouble from this pest next year.

The sorghum webworm was reported from scattered localities in the Gulf region and was found damaging stored corn for the first time in many years in Nebraska.

The banded cucumber beetle is decidedly on the increase in the eastern part of its range in South Carolina and Florida, where it is reported doing considerable damage to fall truck.

The Mexican bean beetle has spread westward in Illinois so that it now occupies the central part of the State from 30 to 50 miles from the Indiana State line, and is well established over the southern quarter of Michigan.

The harlequin bug made its first appearance in southeastern Iowa in October. It is quite generally reported as more or less troublesome along the northern border of its normal range.

A few specimens of living pink bollworms were found at three points in northern Florida near the southern part of the main cotton belt and appropriate quarantine restrictions have been issued by the Department. This pest is reported as more abundant than ever before in the known infested area of the Big Bend of Texas.

Two additional reports of heavy outbreaks of walkingsticks defoliating small forest areas were received during October, one from Pennsylvania and the other from Ohio.

An unprecedented outbreak of the screw worm was reported during the month from the Yazoo-Mississippi Delta in Mississippi, occasioning some loss to livestock.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

South Carolina. W. J. Reid, jr. (October 15): Melanoplus femur-rubrum DeG. has done severe damage to young cabbage and turnip plants on experimental insect control plots at Charleston. The injury is most severe on areas adjoining hay fields and along ditch banks. The insects are more abundant than usual this fall.

Michigan. R. H. Pettit (October 22): Grasshoppers were numerous in the Upper Peninsula and in the upper third of the Lower Peninsula. The common one in the Upper Peninsula was M. bivittatus Say, while the common ones in the Lower Peninsula were Cammla pellucida Scudd. and M. mexicanus Sauss. They were controlled where treated but there is so much wild land in both of these places that a good many escaped.

Mississippi and Alabama. K. L. Cockerham (October 18): On this date a great horde of Schistocerca americana Drury were found flying across a suburban farm at Biloxi. It was the largest flight that I have seen in this section. They were flying high through the tops of the trees and going in a general northerly direction with the prevailing wind. No evidence of feeding damage was noticed and when the insect alighted on the trees, weeds, grass, etc., they did not appear to feed but only to remain until a gust of wind or some other disturbance caused them to take to the air again. The flight could not be traced very far from this small farm; and the people had not noticed any grasshopper nymphs during the early part of the fall or summer. Messrs. O. T. Deen and F. A. Wright report this insect very plentiful in Hancock County, Miss. Unverified reports state that in some sections it was necessary to raise car windows to keep the insects from flying into the cars as they were moving along the road. On October 20 some of the same species were noted in the extreme southern end of Mobile County, Alabama. The distance from the western Mississippi observation to the Alabama observation was at least 75 miles. There was evidently a considerable distribution of these insects and a considerable migration.

Wyoming. C. L. Corkins (October 12): Although an egg survey in Park County has shown little evidence of a heavy infestation, the eggs have been laid generally along roadsides, in alfalfa and clover fields, and on ditch lands so such a survey is misleading. The evidence of late fall abundance and very favorable weather conditions for the past two months indicates a general and severe infestation on the Powell flats next year. Dipterous parasites are fairly abundant, but have not greatly checked the hoppers.

Colorado. G. M. List (October 19): A recent survey has shown that eggs are much less abundant in the eastern half of the State than they have been for two years. It seems that we have passed the peak of the outbreak and that trouble can be expected only in localities in the western central parts of the State. Eggs are going to be somewhat more abundant in some of the western slope counties than they have been and it appears that the population is somewhat on the increase, but it is hardly thought that a general outbreak will occur next year.

Louisiana. W. E. Hinds and C. E. Smith (October 27): Adults of S. americana are very abundant around sugarcane.

WHITE GRUBS (Phyllophaga spp.)

- Vermont. H. L. Bailey (October 24): White grubs continued to damage the potato crop in the western part of Vermont. In some cases growers whose fields were certified for seed have found it impracticable to attempt grading the tubers for seed and have sold them for table stock in bulk.
- Maryland. E. N. Cory (October 20): White grubs are injuring coniferous nursery stock in Baltimore County.
- Virginia. W. J. Schoene (October 10): During the season reports have been received of serious injury to sod and to cultivated crops in Loudoun, Shenandoah and Tazewell Counties.
- Ohio. T. H. Parks (October 22): White grubs are very abundant.
- Kentucky. W. A. Price (October 26): White grubs during the early part of the month were reported doing serious damage to lawns and strawberry plants at Paducah, Bowling Green, Berea, Vanceburg, and Lexington.
- Michigan. R. H. Pettit (October 22): White grubs were plentiful, although most of them belonged to Brood A, which was due to fly this year. Therefore, we are expecting a very serious attack next year over the lower half of the State.
- Nebraska. M. H. Swenk (October 20): White grubs were found responsible for an extensive amount of injury to a field of early-sown rye in Douglas County during the last week in September, and to early-sown wheat in Kearney County during the first week in October.
- Kansas. H. R. Bryson (October 20): White grubs were observed injuring newly started wheat plants in plots at Manhattan. Diggings to determine the population indicate that considerable damage can be expected next year. From 5 to 25 grubs have been taken in each hole one foot square, dug in grassy land in cultivated areas.

FIELD CRICKET (Gryllus assimilis Fab.)

- California. F. H. Wymore (October 6): The field cricket has appeared in great numbers at various points in the Sacramento Valley this summer. In the first part of July the adults were quite numerous about Williams, and on August 25 they were reported entering clothing stores in Sacramento, doing considerable damage by chewing holes in blankets and other cotton goods. At the present date the nymphs of various sizes (almost full-grown ones predominating) are migrating in great numbers from the fields into irrigated districts and about the homes, where they are causing considerable annoyance.

JAPANESE BEETLE (Popillia japonica Newm.)

- New Jersey. Monthly Letter of Bureau of Entomology, U.S.D.A. No. 220 (August): The Japanese beetle has added several food plants in the Pine Barrens to its list. In addition to feeding upon the bracken and cinnamon fern, it now defoliates shinning sumac (Rhus copallina) and the tough-leaved scrub oak (Quercus ilicifolia). Numerous other plants characteristic of the Pine Barrens also fed upon. Grassy areas and margins furnish proper conditions for the development of larvae throughout the pine region. It is believed that

northern bayberry, Myrica carolinensis, may be attacked, although the conclusion is based on damage rather than on actual observation of feeding. In the June Monthly Letter it was noted that grubs were unusually numerous around dwarf dandelion (Adopogon carolinianum). As there was some question as to the correctness of this identification, specimens were turned over to the Academy of Natural Sciences in Philadelphia. They report that it is Lactuca stolonifer a plant native to Japan.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Illinois. W. P. Flint (October 21): The fall brood came out at about the normal dates. The egg-laying period extended a little later than usual, and a very heavy fall brood of fly emerged. Eggs were extremely abundant on volunteer wheat, 159 eggs having been counted on a single wheat leaf.

J. H. Bigger (October 17): The estimate is that 90 per cent of farmers in western Illinois waited until or after the recommended date of seeding this season. Examinations in Hancock and Cass Counties indicate that wheat seeded before the advised dates now have 30 to 40 per cent of the plants with eggs, while wheat seeded on or a few days after the time recommended has less than 5 per cent of plants with eggs. Wheat has been slow in coming up, owing to dry weather.

Michigan. R. H. Pettit (October 22): There was very little damage this year. The fly is present almost everywhere and the growers have been warned not to take liberties with their seeding dates this season.

Missouri. L. Haseman (October 21): The percentage of parasitism of flaxseeds is very high in central Missouri. The situation is more favorable than last year.

Nebraska. M. H. Swenk (September 20 to October 20): Emergence of the main fall brood was normal in northeastern and southeastern Nebraska, and along the Missouri River counties. In twenty infested counties in south-central Nebraska, however, emergence was more or less delayed, and safe dates of sowing could not be announced before October. In this most delayed area many farmers sowed their wheat before the safe date had arrived, and as a result considerable infestation is expected in this district.

WHEAT JOINT WORM (Harmolita tritici Fitch)

WHEAT STRAW WORM (Harmolita grandis Riley)

Utah. G. F. Knowlton (October 20): Part of the dry-farm wheat samples taken at Starr, Juab County, and at Erda, Lake Point, Lincoln, Mills, Stockton, and Tooele in Tooele County, have been found to be infested by H. tritici. This species is less generally distributed in the State than H. grandis, which was found to occur in practically all wheat-growing areas of Utah during this season.

CORN

SOUTHWESTERN CORN BORER (Diatraea grandiosella Dyar)

Texas. F. L. Thomas (August 24): A correspondent in Donley County sent a specimen with a report the corn crop is damaged 75 per cent.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Texas. F. L. Thomas (August 26): This insect reduced the corn crop by about 50 per cent on very sandy land near Cisco, Eastland County. Severe injury was also reported from Ward and Howard Counties.

CHINCH BUG (Blissus leucopterus Say)

Ohio. T. H. Parks (October 22): The chinch bug is very abundant in some corn-fields.

Illinois. W. P. Flint (October 21): The weather of the fall has been highly favorable to the development of the second brood of chinch bugs. They are now mainly in hibernating quarters and have increased in abundance since last year. An area of over one-half of the State is now known to be seriously infested.

Iowa. H. E. Jaques (October 25): Chinch bugs are showing rather heavy hibernation in several counties. Moderately abundant in Lyon, Union, and Henry Counties and very abundant in Monroe County.

Missouri. L. Haseman (October 21): Most of the chinch bugs have moved to winter quarters. The most severe infestation is in north-central Missouri.

Oklahoma. C. E. Sanborn (October 21): Chinch bugs have been more generally abundant than they have for several years.

C. F. Stiles (October 22 and 24): At this time Kay County is planning on an extensive clean-up campaign during the fall and winter months, and it is quite likely that several of the other counties will join them.

SOYBEAN

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Louisiana. W. E. Hinds and C. E. Smith (October 27): The velvetbean caterpillar has stripped considerable areas of soybeans around Jeanerette, but has not occurred in stripping numbers in other sections.

SORGHUM

SORGHUM WEBWORM (Celama sorghiella Riley)

Nebraska. M. H. Swenk (September 20 to October 20): A Thayer County grain dealer found that some ear corn he had hung up to dry was infested with larvae of the sorghum webworm during the second week in October. This is the third report of this sort that we have had in Nebraska in the last fifteen years.

Mississippi. C. Lyle (October 21): A slight infestation on broom corn was reported from Moorhead, Sunflower County, on September 30.

Texas. F. L. Thomas (September and October): C. sorghicola is very abundant and destructive to late maturing hogari and other grain sorghum.

CORN EAR WORM (Heliothis obsoleta Fab.)

Kansas. H. R. Bryson (October 26): One of the outstanding records of insect damage during the month was a report from Ellsworth and Chetopa, of the corn ear worm attacking the heads of late maturing sorghums. Twelve acres of late planted hogari at Chetopa had the immature seed destroyed. In both localities reports show from one to 12 larvae in practically every head.

FRUIT INSECTS.

APPLE

RIBBED COCOON MAKER (Bucculatrix pomifoliella Clem.)

Nebraska. M. H. Suenk (September 20 to October 20): During the first week in October an apple orchard in Douglas County was found with many cocoons of B. pomifoliella, an uncommon pest in Nebraska.

APPLE LEAF SKELETONIZER (Pteronidea hammondi Riley)

Kentucky. W. A. Price (October 26): The apple leaf skeletonizer has been responsible for considerable damage to apple trees in the Henderson area.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New Hampshire. L. C. Glover (October 22): The apple maggot is the most serious pest of apples in this State at the present time. Injury is probably more severe than the injury from all of the other apple pests put together.

New York. Geneva Experiment Station (October 22): Apple maggots are from scarce to moderately abundant in western New York. Moderately abundant in Hudson Valley and Lake Champlain districts. Slightly more abundant than last season although control is excellent where definite efforts were made to fight the pest.

Pennsylvania. T. L. Guyton (October 27): The apple maggot has appeared in destructive numbers at Harrisburg. A recent survey of Erie County showed it present in all orchards where a definite codling moth spray schedule was not followed out. It was not present in sufficient numbers in sprayed orchards to cause any loss.

APHIDS (Aphidae)

Missouri. L. Haseman (October 21): Lice on the wing were returning to apple October 10 to 20; mostly apple grain aphid (Rhopalosiphum prunifoliae Fitch). Winged and wingless lice observed on apple leaves.

SAN JOSE SCALE (Aspidiotus perniciosus Const.)

Georgia. O. I. Snapp (September 23): The San Jose scale increased rapidly during September. It is so abundant on young peach trees at Fort Valley and Perry that a summer application of oil emulsion had to be applied to hold it in check until the dormant spraying season.

Illinois. W. P. Flint (October 21): This insect is distinctly on the up grade in the central and southern Illinois orchards and has increased rapidly owing to very favorable fall weather.

Michigan. R. Hutson (October 22): The San Jose scale is very abundant.

Texas. F. L. Thomas (August 23): Samples of infested twigs and branches were received this season from Williamson and Bell Counties and they show the infestation to be more severe than usual.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Georgia. O. I. Snapp (October 20): We are still getting some emergence in Fort Valley. Oviposition continues.

Tennessee. G. M. Bentley (October): The peach borer is moderately abundant in eastern and middle Tennessee.

Mississippi. C. Lyle and assistants (October): The peach borer is reported as very abundant in Lauderdale, De Soto, Tunica, Tate, Quitman, Panola, and Lee Counties. (Abstract, J.A.H.)

LESSER PEACH BORER (Aegeria pictipes G. & R.)

Georgia. O. I. Snapp (October 18): The infestation is heavy in neglected orchards in Fort Valley. The emergence of the fall brood of moths is practically completed. Larvae ranging in size from newly hatched to more than three-fourths grown can be found in the trees.

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Pennsylvania. T. L. Guyton (October 27): The oriental fruit moth is very abundant; 40 per cent infestation in Salway peaches.

Virginia. A. M. Woodside (October 25): There was a heavy emergence of the oriental fruit moth, and twig damage was heavy during the early part of the season. Some fruit was damaged by the second brood, but the insect dwindled out until, at ripening time, there was little damage.

Georgia. O. I. Snapp (October 20): The broods were overlapping during September. There was no new injury to peach twigs on account of their hardened condition. Quinces on trees in yards at Fort Valley were rather heavily infested; these and pears are the only hosts available at this season of the year.

Michigan. R. H. Pettit (October 22): The oriental fruit moth is establishing itself over the State rather more slowly than we had expected. Damage was serious in certain localities, but not as a whole.

Tennessee. G. M. Bentley (October): The oriental fruit moth is moderately abundant in middle Tennessee.

Arkansas. W. G. Amstein (October 1): Oriental fruit moths have had a good year in spite of the short peach crop; and the State experiment station orchard at Fayetteville has had very few apples that were free of both codling moth, Carpocapsa pomonella L., and oriental fruit moth.

Mississippi. C. Lyle and assistants (October): Moderate injury to peach twigs by the larvae was reported from Pike, Webster, Bolivar, George, Monroe, De Soto, Tunica, Tate, Quitman, Panola, Lee, Holmes, and Lauderdale Counties. (Abstract J.A.H.)

PLUM CURCULIO (Conotrachelus nemophar Host.)

Virginia. A. M. Woodside (October 25): The plum curculio emerged from winter quarters in large numbers. The losses in unsprayed orchards were heavy, but where the spray schedule was followed they were not severe and, if there had been a normal crop, would have been considered negligible by most growers. In view of the light set of fruit, the damage was more noticeable. In August County the losses were heavier than in any season since 1929. In Rockingham County the overwintering infestation was heavier than last year, and about the same as in 1930. Gathering of drops indicated that there was little damage to the fruit.

Georgia. O. I. Snapp (October 19): Adults are still on trees in peach orchards in Fort Valley. This is the latest date on which we have taken the plum curculio by jarring peach trees; and is the first time since 1931 that they have been on the trees in October.

Ohio. T. H. Parks (October 22): The plum curculio is very abundant. More injury to apples than for two years.

Arkansas. C. L. Rodgers (October): We had about 200 cars of Elberta peaches; very little curculio at harvest.

APPLE CURCULIO (Tachypterellus quadricribus Say)

Kansas. H. R. Bryson (October 26): This insect has caused from 10 to 50 per cent loss to the apple crop in orchards in Doniphan. One orchard at Troy showed a loss of 100 per cent to Jonathan and Ben Davis varieties. In many orchards 33 per cent of the apples have been infested.

RASPBERRY

COMMON RED SPIDER (Tetranychus telarius L.)

Ohio. E. W. Mendenhall (October 13): Red spider mites are very bad in the raspberry plantations in Montgomery County in the vicinity of Dayton.

Indiana. J. J. Davis (October 24): The red spider was abundant on raspberry at Sidney, October 3.

GRAPE

GRAPE LEAF FOLDER (Desmia funeralis Hbn.)

Mississippi. C. Lyle (October 21): Slight injury to grape was reported from Gunnison, Bolivar County, on September 26. Serious injury to grapes was observed at State College during September.

PECAN

TWIG GIRDLER (Oncideres cingulatus Say)

Virginia. H. G. Walker and L. D. Anderson (October 27): The twig girdler has been moderately abundant but has not been nearly so injurious as a year ago.

North Carolina. R. W. Leiby (October 21): The pecan twig girdler is not nearly so abundant and destructive as last year and two years ago.

Georgia. O. I. Snapp (October 4): Some trees have as many as 50 twigs cut off by this insect in Macon.

Mississippi. C. Lyle and assistants (October): Pecan twig girdler damage is becoming evident on pecans in Hinds and Jackson Counties. (Abstract, J.A.H.)

WALNUT

A WALNUT HUSK MAGGOT (Rhagoletis suavis Lw.)

Pennsylvania. J. E. Knoll (October 16): Larvae of the walnut husk maggot are abundant in walnuts in Franklin County.

CITRUS

GREEN CITRUS APHID (Aphis spiraecola Patch)

Mississippi. C. Lyle and assistants (October): Pittosporum trees in Laurel were observed on October 10 to be heavily infested with A. spiraecola Patch, curling the leaves of the new growth. A. spiraecola was more abundant than Toxoptera aurantii Boyer. (Abstract, J.A.H.)

CALIFORNIA FALSE CHINCH BUG (Nysius californicus Stal)

California. R. Bogue (September 25): One citrus orchard in the vicinity of La Habra has had a very heavy infestation of the California false chinch bug, which has done some damage to young trees and foliage.

CITRUS WHITEFLY (Dialeurodes citri Riley and How.)

Mississippi. C. Lyle and assistants (October): The citrus whitefly is very abundant in Jackson and Lauderdale Counties. (Abstract, J.A.H.)

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Georgia. J. B. Gill (October 26): Outbreaks have occurred recently at Pelham, Americus, Bainbridge, McIntosh, and Quitman. Interested persons are being furnished Vedalia beetle material for the control of the scale.

TRUCK - CROP INSECTS

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

South Carolina. W. J. Reid, jr. (October 25): The banded cucumber beetle has been unusually abundant and quite destructive to fall plantings of snap beans, squash, and cucumbers in the Charleston commercial truck-producing area. The insect has been present in large numbers since August and was most destructive to the young plants. The beetles are still abundant, but the mature plants are not suffering so greatly from their attack.

Florida. J. R. Watson (October 26): D. balteata is causing much destruction to turnips, cabbage, mustard, cucumbers, etc., in some districts of central Florida.

E. W. Berger and G. B. Merrill (October 20): This beetle is evidently on the increase and threatens to become a severe pest. It was brought in by a grower at Starke, who advises that it is ruining his fall beans and seedling cabbages.

Alabama. K. L. Cockerham (October 12): These beetles were very numerous on fall Irish potatoes at Foley.

J. M. Robinson (October 24): The banded bean beetle is very abundant on beans and squash at Montgomery, Ramer, and Auburn.

Louisiana. W. E. Hinds and C. E. Smith (October 27): The belted cucumber beetle is moderately abundant in the Baton Rouge district, but not doing conspicuous damage.

STRAWBERRY WEEVILS (Brachyrhinus spp.)

Maine. H. B. Peirson (October 11): A heavy migration of the black vine weevil B. sulcatus Fab. into a house at Sebago was reported.

West Virginia. L. M. Peairs (October 24): B. ovatus L. reported congregating in annoying numbers in a dwelling in Grafton.

FULLER'S ROSE BEETLE (Asynonychus godmani Crotch)

Virginia. H. G. Walker and L. D. Anderson (October 27): The Fuller's rose weevil is very abundant and has been reported as injuring a wide variety of host plants.

GREEN PEACH APHID (Myzus persicae Sulz.)

Virginia. H. G. Walker and L. D. Anderson (October 27): The spinach aphid is becoming very abundant in some fields of spinach at Norfolk.

FALSE CHINCH BUG (Nysius ericae Schill.)

Virginia. H. G. Walker and L. D. Anderson (October 27): The false chinch bug has been very abundant in some early spinach and turnip fields at Norfolk.

South Carolina. A. Lutken (October 24): False chinch bugs (Syn. Nysius angustatus Uhler) are very abundant on turnips and related crops.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Florida. F. S. Chamberlin (October 29): This pest is very abundant at the present time and is especially harmful to beans.

Mississippi. C. Lyle (October 21): A correspondent at Shubuta, Clarke County, sent to this office on October 5 a number of specimens of this species and of Leptoglossus phyllopus L. with the statement that these insects were causing rather serious injury to field peas.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New Hampshire. L. C. Glover (October 22): Forty-eight towns in the State have been found to be infested. This pest is well distributed throughout that part of the State south of Lake Winnepesaukee.

Virginia. A. M. Woodside (October 25): The Mexican bean beetle was fairly numerous and practically prevented any harvest from unsprayed beans. Those who followed recommended control practices report no trouble until late in the season.

H. G. Walker (October 27): The Mexican bean beetle is moderately to very abundant in Norfolk.

W. J. Schoene (October 10): For the past four years the Mexican bean beetle has been somewhat sporadic in its injury, but this year it occurred in sufficient numbers to cause serious injury to beans in southwestern Virginia.

West Virginia. L. M. Peairs (October 24): The Mexican bean beetle is moderately abundant at Morgantown. About the usual number to hibernate.

Georgia. C. H. Alden (October 24): The Mexican bean beetle is moderately abundant at Cornelia, where much injury to late snap beans is being reported.

Indiana. J. J. Davis (October 25): The Mexican bean beetle is very abundant; it has been reported from several localities in the southern half of the State during the month.

Illinois. W. P. Flint (October 21): The Mexican bean beetle has spread westward in Illinois until it now occurs in the central part of the State from 30 to 50 miles from the Indiana State line.

Michigan. R. H. Pettit (October 22): The Mexican bean beetle has established itself in gardens throughout the lower quarter of the State. No reports of serious injury in field beans have been received.

Tennessee. G. M. Bentley (October): The Mexican bean beetle is very abundant in White, Franklin, and Sumner Counties.

Mississippi. C. Lyle and assistants (October): Late lima beans in Prentiss and Monroe Counties are being completely defoliated. (Abstract, J.A.H.)

CABBAGE

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia. W. J. Schoone (October 10): The harlequin bug has been reported as being abundant in the cabbage-growing districts in southwestern Virginia and also in the truck districts around Norfolk and in many other places. While we have frequently had a few reports, this is the first year during my experience that this insect has appeared in such large numbers.

H. G. Walker and L. D. Anderson (October 27): The harlequin bug is very abundant in some fields at Norfolk, but is not causing nearly so much damage as it was when reported on earlier in the season.

A. M. Woodside (October 25): The harlequin bug was numerous over the entire county of Augusta, and did much damage. Most farmers in this vicinity do not recall that this pest has ever caused them any losses before.

South Carolina. A. Lutken (October 24): The harlequin bug is very abundant on cabbage and related crops, particularly in the southern part of the State.

Illinois. W. P. Flint (October 21): This insect continues to be received from a number of points in central Illinois. It has caused serious damage in the west central part of the State in the large trucking area in the vicinity of Quincy.

Ohio. T. H. Parks (October 22): The harlequin bug is very abundant in southern Ohio and is doing damage at Columbus.

Kentucky. M. A. Price (October 26): Harlequin cabbage bugs have done much damage to cabbage, kale and turnips at Lexington, Georgetown, Bowling Green, Burlington, Louisville, and Nicholasville.

Iowa. H. E. Jaques (October 25): The harlequin bug has been taken in Des Moines County.

Missouri. L. Haseman (October 21): Harlequin bugs have been abundant and destructive to turnips. They were still feeding October 20.

Tennessee. G. M. Bentley (October): The harlequin bug is moderately abundant in middle Tennessee.

CABBAGE APHID (Brevicoryne brassicae L.)

West Virginia. L. M. Peairs (October 24): Cabbage aphids are extremely numerous, but heavily parasitized. Much damage to kale is caused by reduction of the market quality due to presence of dead aphids.

CABBAGE LOOPER (Autographa brassicae Riley)

Maryland. E. N. Cory (October 18): The cabbage looper was reported attacking brussels sprouts and broccoli at Chestertown.

Virginia. H. G. Walker and L. D. Anderson (October 27): The cabbage looper is very abundant at Norfolk and has caused considerable damage to fall cabbage where the growers have not taken prompt measures to control it.

South Carolina. W. J. Reid, jr. (October 25): The cabbage looper, is increasing in abundance on commercial cabbage plantings in the Charleston district. This species, and the cabbage webworm (Hellula undalis Fab.) have been the insects that have done most damage to winter cabbage to date.

Ohio. T. H. Parks (October 22): Cabbage loopers have been causing some injury to spinach and tomatoes in the greenhouse.

Louisiana. W. E. Hinds and C. E. Smith (October 27): Reported as being less abundant now than during September, apparently on account of fungus disease control during prolonged rainy periods in October.

CABBAGE WEBWORM (Hellula undalis Fab.)

Virginia. H. G. Walker and L. D. Anderson (October 27): The cabbage webworm is not nearly so abundant at Norfolk as it was last month.

South Carolina. W. J. Reid, jr. (October 25): The cabbage webworm made it quite difficult to obtain a stand of winter cabbage in the Charleston district during late September and October because of its destruction of the young plants.

Alabama. J. Robinson (October 24): The turnip webworm is very abundant at Calhoun on cabbage, at Auburn on turnips, and at Mt. Willing and Millstead on collards.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Virginia. H. G. Walker and L. D. Anderson (October 27): The diamond-back moth is very abundant and has been especially injurious to collards in the Norfolk area.

MELONS

MELON WORM (Diaphania hyalinata L.) PICKLE WORM (Diaphania nitidalis Stoll)

South Carolina. W. J. Reid, jr. (October 25): The melon and pickle worms have wrought their usual destruction to squash and melon plantings in both the Charleston and Piedmont districts of South Carolina since early September. Unpoisoned plantings of these crops have now ceased entirely to produce marketable fruit. In most cases the entire plant has been killed.

Texas. F. L. Thomas (September 23): A very heavy infestation of the melon worm (D. hyalinata L.) was reported by H. B. Parks, who stated that this is the first time he had seen it at San Antonio.

SQUASH

SQUASH BORER (Melittia satyriniformis Hbn.)

Michigan. R. H. Pettit (October 22): The squash borer was present in abnormal numbers, doing a great deal of damage wherever squash were grown. This is an

unusual outbreak; in fact, it is the first time that this insect has done serious injury in 35 years.

Mississippi. R. R. Colmer (October 19): The squash vine borer was causing heavy damage to late plantings of squash at Moss Point, October 1.

CELERY

CELERY LOOPER (Autographa falcifera Kby.)

South Carolina. A. Lutken (October 24): The celery looper has been destructive to celery in Clemson College greenhouse.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

Alabama. J. M. Robinson (October 24): Thrips are very abundant on onions at Auburn.

ONION MAGGOT (Hylemyia antiqua Meig.)

Nebraska. M. H. Swenk (October 20): In Nemaha County winter onion plants were found severely infested during the second week in October. This is the second report of serious damage by this pest in Nebraska that we have received during the past five years.

SWEETPOTATO

SWEETPOTATO LEAF BEETLE (Tyophorus viridicyaneus Crotch)

Tennessee. G. M. Bentley (October): Sweetpotato leaf beetles are very abundant in western Tennessee.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Virginia. H. G. Walker and L. D. Anderson (October 27): The turnip aphid has been very abundant on turnips and on young cabbage plants.

South Carolina. W. J. Reid, jr. (October 25): The turnip aphid is increasing in abundance on fall plantings of cabbage and turnip in the Charleston area. As yet, only the smaller plants are suffering from the attack to a noticeable extent.

Missouri. L. Haseman (October 21): Louse on turnips; still abundant (October 20) but very heavily infested with fungus. Has done considerable damage.

Alabama. J. M. Robinson (October 24): Plant lice are moderately abundant on turnips at Tennille, Auburn, Mt. Willing, and Millstead.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Ohio. T. H. Parks (October 22): Flea beetle larvae have caused some injury to a field of turnips near Columbus.

Alabama. J. M. Robinson (October 24): Turnip flea beetles are moderately abundant at Birmingham.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancylis comotana Froel.)

Ohio. E. W. Mendenhall (October 25): The strawberry leaf roller is very / numerous in strawberry plantings throughout the Miami Valley.

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Tennessee. G. M. Bentley (October): The strawberry crown borer is very abundant in new plantings in Summer County, where it is spreading from old patches and wild plants.

BEETS

BEET LEATHOPPER (Dutettix tenellus Bak.)

Utah. G. F. Knowlton (October 18): Sugar beet and tomato crops suffered slight damage from beet leafhoppers and curly-top during the current season. Fall populations on the northern Utah breeding grounds are in general rather low, being more comparable with the low fall populations of 1931.

S O U T H E R N F I E L D C R O P S

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana. W. E. Hinds and C. E. Smith (October 27): This insect is moderately abundant but doing much less damage generally than appeared probable from heavy hibernation survival occurring last spring.

SUGARCANE BEETLE (Euchroa rugiceps Lec.)

Louisiana. W. E. Hinds and C. E. Smith (October 27): The sugarcane beetle does not appear to have been so abundant this fall as it was one year ago. Only slight attack on the cane sprouts from very early planted cane has been reported this season.

A WEEVIL (Anacetrinus subnudus Buchanan)

Louisiana. W. E. Hinds and C. E. Smith (October 27): A. subnudus, the brown sugarcane rootstock weevil, still occurs commonly but does not seem to be so abundant as one year ago. However, our examinations this season have been much less extensive.

COTTON

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Texas. News Letter, Bureau of Plant Quarantine, No. 22 (October 1): In the Big Bend area of Texas the first cotton was ginned on August 27, and trash from the first three bales was inspected with a machine. These results indicate that the infestation at this time is the heaviest in the history of the Big Bend.

Florida. Office of Information, Press Service, U. S. D. A., (October 27): Shipment of cotton and cotton products from six counties of north-central Florida is restricted, to prevent the spread of the pink bollworm. The few specimens which have been found in that area were all taken in Columbia and Alachua Counties, and the other four counties included in the regulated area represent adjoining territory in which cotton is grown that is ginned at High Springs, Lake City, and other places in these two counties. These additional counties are Baker, Bradford, Gilchrist, and Union. The quarantine restrictions do not seriously impede the movement of cotton. The insect has also been found in wild cotton along the coast of southern and western Florida, but this wild cotton is now being eradicated.

F O R E S T A N D S H A D E - T R E E I N S E C T S

WALKINGSTICK (Diapheromera femorata Say)

Pennsylvania. J. N. Knull (October 4): A severe infestation was observed on the mountains northwest of Dillsburg. The infested area could be seen for a mile or more and resembled the results of a fire at that distance. Practically all of the forest foliage was eaten with the exception of flowering dogwood, sour gum, laurel, and sassafras.

Ohio. J. S. Houser (August): In 1931, nearly 100 acres of a portion of the Shawnee Forest belonging to the State of Ohio and located in Scioto County was almost completely defoliated by this insect. The walkingsticks were reported to have continued feeding on the fallen leaves and adults were found alive until nearly Christmas. Quantities of eggs were deposited and in the earlier part of this year young were abundant. When the tract was examined October 19, 1932, it was found that very little damage had been done this season. Adults were exceedingly rare, thus indicating the attack had almost completely subsided.

FALL WEBWORM (Hyphantria cunea Drury)

Ohio. E. W. Mendenhall (September 2): The fall webworms are very destructive to the foliage of elm trees in parks and streets in towns and cities in central Ohio. They seem to be more abundant this year than usual.

Tennessee. G. M. Bentley (October): Fall webworms are moderately abundant in western Tennessee.

Louisiana. W. E. Hinds and C. E. Smith (October 27): Fall webworms are reported as having destroyed a large proportion of pecan foliage in many areas in the State.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Indiana. J. J. Davis (October 24): The walnut caterpillar was reported abundant at Indianapolis, according to inquiry received October 10.

Tennessee. G. M. Bentley (October): The walnut caterpillar is moderately abundant in western Tennessee.

ORIENTAL MOTH (Cnidocampa flavescens Walk.)

Massachusetts. J. V. Schaffner, jr. (October 25): During August and September this pest attracted very much attention and caused considerable defoliation of fruit and shade trees in several localities of the Metropolitan District of Boston. As in past years, the most severe infestations seem to be confined to vacant lots and back yards of residential sections.

GYPSY MOTH (Porthetria dispar L.)

Pennsylvania. ~~Letter~~ Letter, Bureau of Plant Quarantine, No. 22 (October 1): To date infestation is known to exist in 8 townships, namely: Pittston, Jenkins, Plains, Bear Creek, Wilkes-Barre, Kingston, and Exeter, in Luzerne County, and Lackawanna, in Lackawanna County.

BEECH

WOOLLY BEECH APHID (Prociphilus imbricator Fitch)

Massachusetts. J. V. Schaffner, jr. (October 21): This species was reported as abundant on beech at Rochester, October 19. The infestation is on a part of the water shed of the New Bedford waterWorks.

Pennsylvania. J. N. Knull (October 4): This aphid is abundant on branches of beech trees in various parts of Pennsylvania this fall. The foliage on the infested branches has turned brown and withered.

A SKELETONIZER (Psilocorsis faginella Chamb.)

Maine. H. B. Peirson (October 10): Light outbreak of the beech leaf skeletonizer throughout central Maine.

BEECH SCALE (Cryptococcus fagi Baer.)

Maine. H. B. Peirson (October): Extensive areas of beech in Charlotte are dying as the result of attack from the beech scale. Minor outbreaks occur in the vicinity of Liberty.

BIRCH

BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fall.)

Maine and Massachusetts. H. B. Peirson (October 15): The birch leaf miner is generally abundant throughout central Maine. Work of the skeletonizer has done much to hold the leaf miner in check by feeding ahead of it. Also reported from Petersham, Mass.

New England. J. V. Schaffner, jr. (October 15): Reports from and observations in eastern Massachusetts, Vermont, New Hampshire, and western Maine indicate that there has been very slight change in the intensity of infestation since 1931. From Concord, and Barre, and southward the infestation is very light this year. At Moretown, Vt., it is reported as abundant. Through Ossipee, Conway, and Rumford, Me., 35 to 40 percent of gray and paper birch leaves are infested at points examined, while in locations south of these towns the infestation is much lighter. Unknown predators have removed a great many larvae from their hibernation cells.

BRONZE BIRCH BORER (Agrilus anxius Gory)

Ohio. E. W. Mendenhall (October 12): The birch trees in Dayton and vicinity are doomed on account of the bronze birch borer.

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

Maine. H. B. Peirson (October 18): The birch leaf skeletonizer is very abundant in Kennebec Valley and the Rangeley Lake district. In some places hardly a birch leaf has escaped injury.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Indiana. J. J. Davis (October 24): Boxelder bugs continued to be reported abundant, the new localities reporting included Portland, Veedersburg, and Fowler.

Ohio. T. H. Parks (October 22): Numerous complaints are reaching us about the boxelder bug in houses and on shade trees.

Illinois. W. P. Flint (October 21): The boxelder bug has been much more abundant and annoying than usual.

Michigan. R. Hutson (October 22): During the past month the boxelder bug has enjoyed its seasonal abundance. This time of year it constitutes quite a household annoyance.

Minnesota. A. G. Ruggles (October 22): Boxelder bugs are more numerous than I have ever seen them.

Iowa. H. E. Jaques (October 25): Boxelder bugs are showing up in large numbers in several parts of the State.

Missouri. L. Haseman (October 24): Boxelder bugs are very abundant over the State around boxelder trees and coming into houses.

Nebraska. M. H. Swenk (September 20 to October 20): A great many complaints have been received during October of annoyance by boxelder bugs forcing their way into houses.

Colorado. G. M. List (October 19): The usual number of inquiries are being received in regard to the boxelder bug.

Utah. G. F. Knowlton (October 18): The boxelder bug has been less annoying than last year in many parts of northern Utah. With the arrival of cold weather the bugs have become annoying household pests in localities where they are abundant.

CATALPA

CATALPA SPHINK (Ceratomia catalpae Bdv.)

Ohio. E. W. Mendenhall (September 30): Caterpillars were very numerous on catalpa trees, stripping the leaves and kept on feeding up into September. They seem to be worse on Catalpa bungei.

ELM

ELM BORER (Samerda tridentata Oliv.)

Ohio. E. W. Mendenhall (September 30): Many of the elm trees in parts of cities and towns in central Ohio are infested.

A LEAFHOPPER (Empoa ulmi L.)

Pennsylvania. E. P. Felt (October 22): The elm leafhopper, E. ulmi, was responsible for considerable spotting of elm leaves in the environs of Philadelphia.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

Pennsylvania. E. P. Felt (October 22): The elm bark louse, G. ulmi, was somewhat common in the Philadelphia area, the leaves being badly blackened, presumably as a result of the sooty fungus growing in the honeydew.

FIR

AN APHID (Dreyfusia picea Ratz.)

Maine. H. B. Peirson (October 8): A large area of fir is affected in the town of Brighton by the fir bark louse. The outbreak appears to be following up a river valley. Trees up to 12 inches in diameter are being killed.

LARCH

LARCH CASE BEARER (Colcophora laticella Hbn.)

Maine. H. B. Peirson (October 18): Larch case bearers are migrating from needles to branches and trunks of trees for winter in Sidney.

OAK

A LEAF MINER (Lithocolletis hamadryadella Clem.)

Connecticut and New York. E. P. Felt. (October 22): The white blotch oak leaf miner (P. hamadryadella) was somewhat common on oaks at Stamford, Conn., and at Westbury, Long Island, N. Y.

OAK FIG ROOT GALL (Dryophanta radicola Ashm.)

Pennsylvania. E. P. Felt (October 22): The oak fig root gall was received from Mont Alto, it occurring on a root. This species is recorded as living upon Quercus alba and Q. minor.

WHITE OAK CLUB GALL (Andricus clavulus O. S.)

Connecticut. E. P. Felt (October 22): The white oak club gall, A. clavulus, was reported from the Danbury area as being quite abundant upon individual trees. It is also common in the vicinity of Stamford.

PINE

PINE TUBE MOTH (Eulia pinetubana Kearf.)

Maine. H. B. Peirson (October): Larvae of the pine tube builder were feeding in tubes at Sidney, September 27. On October 14, larvae left tubes in this vicinity.

Massachusetts. J. V. Schaffner, jr. (October 21): This species is unusually common in eastern Massachusetts this fall. In one white pine stand at the Middlesex Fells Reservation the larvae were abundant on October 3.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Pennsylvania. E. P. Felt (October 22): The European pine shoot moth was reported as infesting Austrian pines in the vicinity of Philadelphia.

PITCH MASS BORER (Parharmonia pini Kellic.)

Pennsylvania. J. E. Aughanbaugh and G. S. Perry (October 8): The pitch mass borer is moderately abundant on white pine trunks at Olivers Mills, Luzerne County.

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

Pennsylvania. J. N. Knull (October 8): Injury by this insect, P. pinifoliella, to several ornamental pitch pines has been reported to our office.

INTRODUCED PINE SAWFLY (Diprion simile Htg.)

Maine. H. B. Peirson (October): The imported pine sawfly was defoliating red and white pines at Bar Harbor, September 28.

PINE NEEDLE SCALE (Chionaspis pinifoliae Fitch)

Ohio. E. W. Mendenhall (October 25): Mugho pines in many cases are quite badly infested throughout central Ohio.

Minnesota. A. G. Ruggles (October 22): The pine leaf scale is abundant in spots around St. Paul and Minneapolis and going into winter with many perfect eggs under the old scales.

Iowa. H. E. Jaques (October 25): The pine leaf scale is very abundant in Henry County.

PINE CONE GALL (Rhabdophaga strobiloides Walsh)

Oregon. E. P. Felt (October 22): The pine cone gall, R. strobiloides, was received from Moro, and presumably is somewhat common in that district.

TULIP

TULIP TREE SCALE (Toumeyella liriodendri Gmel.)

Indiana. J. J. Davis (October 24): The tulip tree scale was very abundant on the tulip tree at Peru, October 8. This is a northern record for this insect.

SPRUCE

EASTERN SPRUCE BEETLE (Dendroctonus piceaperda Hopk.)

Maine. H. B. Peirson (October 8): A small outbreak of the spruce borer beetle in Squaw Mt. Township, Piscataquis County.

SPRUCE MITE (Paratetranychus uniunguis Jacobi)

Maine. H. B. Peirson (October 10): Red spiders P. uniunguis were severe on white spruce in Augusta.

SYCAMORE

GIANT APHID (Longistigma caryae Harr.)

New York and New Jersey. E. P. Felt (October 22): The giant hickory aphid was locally somewhat abundant on sycamore on Long Island, N. Y., and in several new Jersey localities. It was said that the insects were so numerous on the

oriental planes that the falling honeydew kept the walks beneath moist and was a distinct source of annoyance to those passing beneath the trees.

WILLOW

A SNOUT BEETLE (Orchestes rufipes Lec.)

Maine, New Hampshire, and Massachusetts. J. V. Schaffner, jr. (September 19): Reports have been received in 1932 of the occurrence of this species on willow in South Paris and Kennebunk, Maine; Hampton Falls, New Hampshire; and Hamilton and Natick, Mass. Several trees at Hampton Falls, N. H., and at Kennebunk Beach, Me., had from 50 per cent to 75 per cent of the leaves infested.

Maine. H. B. Peirson (October 7): Rather severe outbreak of the willow snout beetle, O. rufipes, at Cape Elizabeth.

BUCK MOTH (Hemileuca maia Drury)

Pennsylvania. J. N. Knull (October 9): The buck moth has been unusually abundant in parts of Franklin County this fall. Many moths were observed in flight on October 9.

GIANT WILLOW APHID (Tuberolachnus saligna Gmelin)

Massachusetts. E. F. Felt (October 26): The giant willow aphid was reported abundant on willows at Medford.

BEAKED WILLOW GALL (Phytophaga rigidac O. S.)

New York. E. F. Felt (October 22): The beaked willow gall was received from Mount Kisco, and presumably was somewhat abundant.

INSECTS AFFECTING GREENHOUSE

AND ORNAMENTAL PLANTS

CHINESE MANTIS (Tenodera sinensis Sauss.)

West Virginia. L. M. Fears (October 24): The Chinese mantis is increasing its range within the State and becoming a local factor in the control of some of the larger fall insects.

Iowa. H. E. Jaques (October 25): The oriental mantis is now found in Henry County.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

New York. E. F. Felt (October 22): The flat-headed borer, C. femorata, was received from New York City, accompanied by specimens indicating a somewhat general infestation of dogwood trunks. It is probable that the trees had been weakened by drought or possibly ground fires.

TWO-MARKED TREEHOPPER (Enchenopa binotata Say)

Nebraska. M. H. Swenk (September 20 to October 20): During September, as also earlier in the season of 1932, reports were received of an abundance of the two-marked treehopper on bittersweet.

WHITEFLIES (Aleyrodidae)

Georgia. O. I. Snapp. (September 24): Whiteflies were very abundant and caused considerable injury to gardenias during September in Fort Valley.

GARDEN CENTIPEDE (Scutigera immaculata Newp.)

Ohio. J. S. Houser (October): A very sparse infestation on cucumber found near Cleveland. This is of interest since it is the first time this pest has been taken from this area.

California. A. E. Michelbacher (October 20): During the past month in Berkeley I have made observations on the garden centipede, S. immaculata, doing considerable damage to snapdragons in greenhouses. The pest has caused serious loss in both raised and ground benches.

GLADIOLUS

GLADIOLUS THRIPS (Taeniothrips gladioli M. & S.)

New Hampshire. L. C. Glover (October 22): The gladiolus thrips has caused severe injury in certain plantings during this last season.

Indiana. J. J. Davis (October 24): The gladiolus thrips was reported very destructive at Delphi, September 24. Apparently the infestation originated on bulbs purchased in one of the Eastern States.

Florida. J. R. Watson (October 26): T. gladioli is present on volunteer gladiolus plants in many places but not so abundantly as last spring.

California. S. F. Bailey (July 16): T. gladioli was collected in the garden of Mr. J. D. Long, who stated that last winter he had purchased corms in Colorado and Berkeley, Calif.

MAGNOLIA

MAGNOLIA SCALE (Neolecanium cornuparvum Thro)

New York. E. P. Felt (September 23): The magnolia scale was somewhat abundant and injurious to magnolias in Rochester.

NARCISSUS

BULB MITE (Rhizoglyphus hyacinthi Bdv.)

Ohio. E. W. Mendenhall (October 12): I find in many cases that the bulb mite is very bad in narcissus bulbs grown at Dayton.

INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

MAN

BLACK WIDOW (Lathrodectus mactans Fab.)

Virginia. L. D. Anderson and H. G. Walker (October 27): The hourglass spider, L. mactans, is very abundant in the Norfolk area of Virginia. Numerous specimens have been brought into the laboratory for determination and many have been observed in the fields and woods about the Virginia Truck Experiment Station. Most of the specimens observed have been in the immature stage and no reports of poisoning by these spiders have been recorded.

MOSQUITOES (Anopheles sp.)

Tennessee. G. M. Bentley (October): Mosquitoes, Anopheles sp., are moderately abundant in western Tennessee; malaria is very bad in that district.

CATTLE

SCREW WORM (Cochliomyia macellaria Fab.)

Mississippi. C. Lyle and assistants (October): An unprecedented outbreak of the screw worm is reported from the Yazoo, Miss., Delta, in Hinds, Rankin, and Scott Counties. Similar trouble is also reported from Pearl River County in southern Mississippi. Losses of sheep, cattle, and hogs are being reported from many localities. (Abstract, J.A.H.)

HORSE

HORSE FLIES (Tabanus spp.)

Oklahoma. C. E. Sanborn (October 21): Horse flies, T. equalis Hine, and T. sulcifrons Macq., T. gracilis Wied., and T. rubescens Bellardi are generally prevalent near Stillwater.

HOUSEHOLD AND STORED-PRODUCT INSECTS

TERMITES (Reticulitermes spp.)

United States. T. E. Snyder (September): During September 94 cases of termite damage were reported to the Bureau of Entomology. The following list gives the number of cases reported from each section: Middle Atlantic, 27; South Atlantic, 14; East Central, 7; North Central, 3; West Central, 16; Lower Mississippi, 11; Southwest, 11; and Pacific Coast, 5.

A TENEBRIONID (Platydera ruficornis Sturm)

Nebraska. M. H. Swenk (October 20): A Nemaha County correspondent found larvae and beetles of the tenebrionid, E. ruficornis, injuring ear corn in the crib by eating the kernels off the cob, during the third week in October. This is the second instance of this sort of injury that has come to our attention from Nemaha County during the last five years.

INSECT CONDITIONS IN PUERTO RICO FROM JANUARY 1 TO JUNE 30, 1932

M. D. Leonard

Insular Experiment Station, Rio Piedras, Puerto Rico.

A 2-acre planting of P.O.J. 2878 sugarcane at the experiment station at Rio Piedras was considerably infested with Sipha flava Forbes during February, March, and April, which were very dry months. On June 4 a light infestation was found on a 2-acre experimental planting of P.O.J. 2725 sugarcane at the station on 2-months-old ratoons in spite of continued rains during May. (T. Bregger.)

Adults of Scymnillodes gilvifrons Chpn. were found on coffee leaves at Adjuntas, April 14. (R. G. Oakley.)

A large number of adult beetles of Disonycha laevigata Jacoby were found on corn leaf sheaths at Loiza, April 11. (C. G. Anderson; det. H. S. Barber.)

Adults of Peregrinus maidis Ashm. were found to be common on the leaf sheaths of several corn plants at Loiza, April 11. (C. G.A.; det. P. W. Oman)

A moderate infestation of larvae of Laphygma frugiperda A. & S. was found in the ears of corn on several plants at Loiza, April 11. (C. G. A.; det. W. Schaus.)

Adults of Oscinella coxendix Fitch were found to be common on the leaf sheaths of several corn plants on a plantation at Loiza, April 11. (C. G. A.; det. J. M. Aldrich.)

A large number of adults and nymphs of Nezara viridula L. were found on the leaves and pods of crotalaria on a plantation at Naguabo, June 3. (C.G.A.; det. H.G. Barber.)

Adults of Kolla similis Walk. were very abundant on the leaves of Mallojillo (or Para) grass at Bayamon, May 15. (C.G.A.; det. P.W.O.)

The adults of Collaria oleosa Dist. were numerous on the leaves of Panicum barbinode at Bayamon, May 15. (C.G.A.; det. H.G.B.)

Adults of Zelus subimpressus Stal were numerous on the leaves of Panicum barbinode at Bayamon, May 15. (C.G.A.; det. H.G.B.)

Mormidea cubrosa Dallas was moderately abundant on grass at Ponce, May 13. (R.G.O.; det. H.G.B.)

A moderate number of adults of Milichiella lacteipennis Loew were found on the leaves of 20 eggplants at Loiza, March 14. (A. S. Mills; det. J.M.A.)

A light infestation of larvae of Carpolonchaea pendula Bezzi was found in the pods in a hamper of Lima beans at Isabela, March 24. The adults were reared. (C.G.A.; det. J.M.A.)

Saissetia oleae Bern. was very bad on a number of young mahogany trees at the Forestry Station, Rio Piedras, March 29. (Det. H. Morrison.) Several

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considerable-sized plantings of cassava, from 6 months to 1 year old, were reported to be so badly infested that many of the bushes were entirely devoid of leaves and were dying. Several branches, nearly one-half inch in diameter, submitted for identification, were badly encrusted with the scales in all stages of growth, May 25.

On March 17 at Las Marias the young leaves of a small tree, Momnea americana, were heavily infested by Toxoptera aurantii Boyer. (A. G. Harley; det. F. W. Mason.) At Arecibo, April 5, this insect was very heavily infesting growth of five grapefruit trees. (C.G.A.; det. P.W.M.) At Santurce, May 9, there was a light infestation on the young shoots of several Maria trees. (M.D.L.) A moderate number of nymphs and adults were found on the young leaves of grapefruit at Manati, May 13. (A.S.M.; det. P.W.M.)

A small number of adults of Dikraneura depressa McA. were found on leaves on several grapefruit trees at Arecibo, April 5. (R. Faxon; det. P.W.O.)

All stages of Aleurothrixus howardi Quaint. were present in moderate numbers on the leaves of several grapefruit trees at Palo Seco, April 4. A light infestation was found on the leaves of one grapefruit tree at Toa Baja, May 17. (A.S.M.)

Adults of Frankliniella insularis Fkln. were found in hibiscus flowers on March 20, and on grapefruit blossoms May 17 at Mayaguez. (A.G.H.; det. J. R. Watson.) A moderate number of these thrips were found feeding in several grapefruit blossoms at Palo Seco, April 4. (A.S.M.; det. J.R.W.) At Vega Alta, April 15, the thrips was numerous in the blossoms of many grapefruit trees. (C.G.A.; det. J.R.W.)

A moderate number of Frankliniella difficilis Hood were found feeding in several grapefruit blossoms at Palo Seco, April 4. (A.S.M.; det. J.R.W.) This thrips was numerous in the blossoms of many grapefruit trees in Vega Alta, April 15. (C.G.A.; det. J.R.W.)

Beetles of Exophthalmodes roseipes Chevrolat were numerous and eating the leaves of grapefruit in Vega Alta, April 15. (C.G.A.; det. L. L. Buchanan.) On May 12, at Manati, this insect was abundant, having eaten pieces out of many of the leaves of grapefruit. (A.S.M.) The beetles were fairly common and causing some foliage injury in two grapefruit groves at Palo Seco, May 20. (M.D.L.)

During April, May, and June adults of Diaprepes spengleri L. were very numerous in citrus groves in the northern and western parts of the Island. Specimens submitted were identified as the following varieties of spengleri: doublieri, abbreviatus, and festivus. (C.G.A.) Adults of this insect were abundant at Arecibo, May 24, doing considerable damage to the foliage of grapefruit. A few egg masses were also found. (R.F.) At San Juan, May 7, beetles were observed abundantly (and in copula) on a casuarina hedge. (M.D.L.)

Adults of Morellia scapulata Bigot were found to be common on grapefruit at Arecibo during the examination of about 50 trees, March 1. (C.G.A.; det. J.M.A.) Adults were numerous on the underside of grapefruit April 5. (R.F.; det. J.M.A.)

On March 1, at Arecibo, while examining 50 trees, adults of Sapromyza pic-ticornis Coq. were found to be common on grapefruit. (R.F.; det. J.M.A.)

Adults of Chrysotus excavatus Van D. were found on grapefruit in small numbers at Arecibo, March 1. (C.G.A.; det. J.M.A.)

Adults of Notogonidea vinulenta Cres. were numerous on the flowers of many grapefruit trees at Barceloneta, May 10. (C.G.A.; det. S. A. Rohwer.)

At Corozal adults of Argyria diplomachalis Dyar were found to be common on several guava trees March 18. (C.G.A.; det. W. Schaus.)

Heterothrips sericatus Hood were numerous in all of the blossoms on one guava tree at Barceloneta June 14. (A.S.M.; det. J.R.W.)

A moderate infestation of Fulvinaria psidii Mask. was found on the leaves of guava at Lares April 15. (R.G.O.; det. H. Morrison.)

Twenty per cent of about 100 pods of tamarind were found infested with the larvae of Myelois ceratoniae Zell., Trujillo Alto, March 15. (A.S.M.; det. C. Heinrich.)

A heavy infestation of Aulacaspis pentagona Targ. was found on the trunks of 20 papaya trees at substation, Isabela, March 8.

A heavy infestation of Saissetia hemisphaerica Targ. was found on the stems and leaves of 20 papaya trees at the Isabela substation March 8. (C.G.A.) A light infestation of this insect was found on the stems of three pepper plants at the experiment station, Trujillo Alto, March 9. (C.G.A.; det. H.M.) On March 29 the scale was fairly abundant on two small trees, Tamarix sp., at the Forestry Station, Rio Piedras. (M.D.L.; det. H.M.)

A new species of Empoasca which is related to E. minuenda Ball, was fairly common, breeding on the leaves of four trees of Anonna diversifolia, at Rio Piedras February 15. (M.D.L.; det. P.W.O.) A moderate number of adults and nymphs of E. minuenda were found feeding on the leaves of one avocado tree at Santurce April 1. (A.S.M.) A small number of adults were found on the leaves of grapefruit at Arecibo, April 5. (C.G.A.; det. P.W.O.)

Adults of Cicadella sirena Stal were numerous on tropical almond leaves at Arecibo May 20. (C.G.A.; det. P.W.O.)

A moderate number of adults and nymphs of Macrotracheliella laevis Champ. were found feeding on Gynaikothrips uzeli Zimm. on Ficus nitida leaves on the Caguas Plaza April 8. (A.S.M.; det. H. G. Barber.)

A heavy infestation of Ischnaspis longirostris Sign. was found on the leaves of four Ficus nitida trees on the Caguas Plaza April 8. (C.G.A.)

Adults of Carpolonchaea pendula Bezzi were reared from the fruit of Inga laurina. Twenty-five per cent of the fruits were infested with larvae on one plantation at Jayuya, January 18. (R.G.O.; det. J.M.A.)

A heavy infestation of Pseudoparlatoria ostreata Ckll. was found on the bark of a Panama potato tree (Solanum grandiflorum leicarpum) while examining four trees at Juncos January 25. (R.F.)

A few adults of Nessorhinus vulpes A. & S. were found on the stems of hicaco (Chrysobalanus icaco) on a plantation near Arrecibo May 20. (C.G.A.; det. P.W.O.)

Adult beetles of Oxaxis sp. (possibly new) were numerous on the leaves of several Calophyllum antillanum (Maria) trees in Santurce, May 9. (A.S.M.; det. H.S.B.)

Chrysomphalus dictyospermi Morg. is very bad on a number of young mahogany trees at the Forestry Station, Rio Piedras, March 29. (M.D.L.; det. H.M.)

Adults of Ormenis quadripunctata Fab. were numerous on the leaves of several Cocolobis uvifera (L.) Jacq. plants at Anasco May 2. (C.G.A.; det. P.W.O.)

Adults of Bothriocera venosa Fowler were numerous on the leaves of several seagrape plants, Cocolobis uvifera (L.) Jacq., in Anasco May 2. (A.G.H.; det. P.W.O.)

Many adults of Ormenis pygmaea Fab. were found on the leaves of pomarrosa trees at Corozal April 12. (C.G.A.; det. P.W.O.)

Adults of Colpoptera maculifrons Muir were numerous on the leaves and stems of pomarrosa at Bayamon June 6. (A.S.M.; det. P.W.O.)

Several Cassia siamea trees on the Station grounds at Rio Piedras were badly infested with Asterolecanium pustulans Ckll. May 6. (F. Sein.)

A number of casuarina trees on the plantation at Rio Piedras were moderately infested with Howardia biclavis Comst. (G. N. Wolcott; det. H.M.)

The following insects were collected either on unidentified plants or at lights and in many cases are the first records for the species from Puerto Rico:

<u>Exitianus obscurinervis</u> Stal.	<u>Monodes agrotina</u> Guen.
<u>Enaytatus geniculatus</u> Reut.	<u>Monamus concinnulus</u> Walk.
<u>Corecoris batatas</u> Fab.	<u>Comoderus bifoveatus</u> Beauv.
<u>Pycnoderes heidemanni</u> Reut.	<u>Stephanoderes braziliensis</u> Hopk.
<u>Polymerus cuneatus</u> Dist.	<u>Cactylosternum abdominale</u> Fab.
<u>Reuteroscopus ornatus uvidus</u> Dist.	<u>Disonycha spilotrachelus</u> Blake
<u>Lasiophilus fuscus</u> Reut.	<u>Siphunculina signata</u> Wollaston
<u>Argyria lacteella</u> Fab.	<u>Acinopterus angulatus</u> Laws.
<u>Mocis disseverans</u> Walk.	<u>Baccha dimidiata</u> Fab.

Correction: Vol. 12, No. 7, p. 338, 4th paragraph, the last sentence refers to Systema basalis Duv. and not to Cylas formicarius Fab.

THE EFFECT OF THE HURRICANE OF SAN CYPRIAN
ON INSECTS IN PUERTO RICO
G. N. Wolcott

Insular Experiment Station, Rio Piedras, Puerto Rico

The north coast of Puerto Rico was swept by a hurricane on the night of September 26, 1932, the violence of which continued for four or five hours into the morning of the 27th. The direction of the wind was almost entirely from the north and northeast; it veered to the south less than half an hour before decreasing greatly in intensity. Only slightly less than the reported maximum velocity of 160 miles per hour was maintained throughout most of the period of the hurricane.

The effect of the hurricane on many insects presumably will not be marked; those which are subterranean, for instance, being but little affected by the high wind, while the rainfall accompanying was no more than the precipitation of many an ordinary storm. On the first night after the hurricane a May beetle, Phyllophaga portoricensis Smyth, was noted at candlelight on the second story of a house in Rio Piedras, and on the following night two black "hard-back" beetles, Dyscine-tus barbatus Fab., were found under similar conditions. The entrances of ant nests in the ground were noted as being open by the second morning; and while the food supply of the ants may differ from normal, it should not lack for quantity. Ants living in trees may, however, suffer a temporary loss in population, as branches weakened by their tunnels would presumably be most easily wrenched off by the wind. Similarly, insects living within plant tissue are but little affected, the caterpillars of the sugarcane borer, Diatraea saccharalis Fab., being uninjured, even when the cane itself is flat on the ground.

Despite the almost total defoliation of most trees, leaf-feeding insects appear to be present in normal abundance, more adults of the common large otiorhynchid beetle Diaprepes abbreviatus L. having been noted in citrus nurseries at Rio Piedras and Bayamon a few days later than had previously been observed in several months. Even such apparently fragile insects as butterflies may not have been much affected, except as their habitat may have temporarily been changed, a zebra butterfly, Heliconius charitonius L., for instance, having been noted flying about in the plaza at Rio Piedras far from the woodland glades it usually frequents.

The insects feeding on dead or dying wood, on or under dead leaves, and on rotting fruit will of course have enormously increased supplies of food available for their consumption, at least temporarily, but practically none after the supply at present available disappears, and a corresponding fluctuation in their abundance may be anticipated.

As regards the natural enemies of insects, considerable numbers of dead toads have been noted since the hurricane, but these stupid animals are so often run over by automobiles under normal conditions that the observed mortality may be little more than would have occurred during heavy rainfall unaccompanied by high wind. In defoliated citrus groves birds seem much more numerous than formerly, for they are not accustomed to the absence of leaves, and take no precautions to remain hidden; even if that were possible. So far as observed, there has been no great mortality among them, despite that reported after previous storms. For

instance, Van Zwaluwenburg, quoting Barrett, states that the changa, Scapteriscus vicinus Scudder, "has been very troublesome in Puerto Rico only since the hurricane of 1876, which is supposed to have destroyed most of the insect's bird enemies. After 1885 the insect seemed to decrease slightly in numbers until the hurricane of August, 1899."

Surprisingly enough, the insects most directly affected by the hurricane are the scale insects. The trunks and branches of trees exposed to the full force of the wind are smoothed of rough bark and all projections in a most surprising manner. Of course some scales persist in the crotches and on the petioles of leaves, but the breaking off of leaves, twigs, and large branches causes an immediate decrease in their numbers only exceeded by the mortality caused by the direct action of the wind and rain in rubbing the insects from their host. Despite the temporary very great decrease in the number of scale insects, in the case of the cottony-cushion scale, Icerya purchasi Mask., the ultimate effect of the hurricane will be to greatly extend its previously restricted range. Previous to the hurricane, its distribution was largely limited to casuarinas and citrus trees in San Juan and Santurce, and to citrus groves along the coast to a little west of Dorado, extending inland only to Pueblo Viejo and Bayamon in small and scattered infestations. Owing to the effect of the fungus in the summer, and more recently to the greatly increased numbers of Australian lady beetles, (Ucdalia) Rodolia cardinalis Mulsant, both in citrus groves and on casuarina trees, coupled with effective spraying, the numbers of this new pest had been greatly reduced. Since the hurricane, only a few small scales can be found on the trees previously even most heavily infested, but as this foreign scale can thrive on many kinds of native trees and plants, its distribution has presumably been greatly extended to the south and west of its former range.

Specimens of a scale (tentatively identified by me as Saissetia olcae Bern.) are very abundant on a considerable number of Ficus sp. trees along the road south from Fajardo, blackening their branches and in some cases causing considerable defoliation. I do not previously remember having noted this scale in such large numbers and on so many trees. As to the species of Ficus, it is not nitida and not laevigata.

A NOTE FROM CUBA

A PYRALID (Homocosona electellum Hulst)

Cuba. A. Busck. In two letters, of September 8 and 20, Dr. S. C. Bruner, Chief of the Department of Entomology, Estacion Experimental Agronomica, Santiago de las Vegas, Cuba, reports 21,600 acres of commercial sunflower, planted near Madruga, eastern Havana Province, seriously injured by H. electellum (Heinrich det.), 500 acres being nearly ruined.

INSECT CONDITIONS IN COSTA RICA DURING AUGUST, SEPTEMBER, AND OCTOBER, 1932

C. H. Ballou

San Jose, Costa Rica

Diestostemma rugicolle Sign. is doing little if any damage to coffee in San Pedro de Montes de Oca and Paso Ancho de San Sebastian (October 8). This insect feeds on Casuarina.

Macroductylus costulatus Bates and Faula brunneipennis Bates were observed on peach leaves and buds in May and June and caused considerable damage on leaves and buds from May to the middle of July at San Pedro de Montes de Oca. (Det. E. A. Chapin.)

In May, June, and July the beetle Colaspis prasina Jacoby was bad on the leaves of eggplant at San Pedro de Montes de Oca. (Det. H. S. Barber.)

Diabrotica corusca Jacoby and D. theimei Baly were taken August 5 on Cucurbita ficifolia Bouche at San Pedro de Montes de Oca. (Det. H. S. Barber.)

The weevil Geraeus senilis Gyll. was observed on the axils of corn leaves July 9 at San Pedro de Montes de Oca. (Det. L. L. Buchanan.)

The caterpillars of Laphygma frugiperda S. & A. were very harmful on half-grown corn plants in late June and July, San Pedro de Montes de Oca. At La Palma, October 4, this insect was doing considerable damage to corn. (Det. W. Schaus.)

The moth borer Azochis gripusalis Walk. was harmful during the entire year to figs, discouraging the growing of this fruit. Adults are still emerging (August 13) from caterpillars that I have been rearing since May 28. The old borings are often occupied by families of earwigs. This moth borer is beginning to become serious again on fig, October 8. San Pedro de Montes de Oca. (Det. Schaus.)

Moths of Stenoma sororia Zell. are very bad; caterpillars fasten leaves together and eat between and bore into buds and tender twigs; pupae between leaves; observed May 28 to August 13, San Pedro de Montes de Oca. (Det. A. Busck.) August 13 to October 8 the caterpillars of this insect were abundant and harmful, causing the death of twigs of avocado at San Pedro de Montes de Oca.

A tent-caterpillar, Stericta albifasciata Druce, has been found on avocado at San Pedro de Montes de Oca; the tents were small, probably because I discovered them and destroyed them before they had done much damage. Pupae covered with soil are on the surface of the soil. (August 13.) (Det. Schaus.)

The tent caterpillar Jocara subcuroalis Schs. ? appears to be more harmful than Stericta albifasciata Druce, defoliating and destroying tender bark on small branches and causing loss of branch. Pupae in leaf trash. June 24 to August 13. San Pedro de Montes de Oca. (Det. Schaus.)

Jocara claudalis Mosch. is bad on avocado at San Pedro de Montes de Oca. The new brood of caterpillars was at work August 12; it pupates just below the

surface of the soil. From August 13 to October 8 this caterpillar was abundant and harmful, causing the death of twigs. (Det. Schaus.)

The moth Hyohypena colvodes Wals. is not serious; caterpillars and pupae are scattered mostly on outer leaves of avocado; naked pupae on upper surface of leaves. Observed at San Pedro de Montes de Oca from May 10 to September, the caterpillar of this insect was usually present but not numerous on avocado and rather hard to collect because it feeds upon leaves on rather inaccessible branches. (Det. Busck.)

The moth borer Hypsipyla grandella Zell. destroys the greater part of young cedar trees at the school at San Pedro de Montes de Oca before they attain 1 meter height. Larvae have been abundant since first observed June 27 until the present time, September 9. More adults of the moth borer have emerged. It prefers C. montana var. mexicana Turcz. to C. glaziovii var. puberula C.D.C. (Det. C. Heinrich.)

Three specimens of moths reared from the leaves of roble de sabana, Couralja rosea Donnell-Sm., San Pedro de Montes de Oca, July, determined by W. Schaus as Mesocondyla concordalis Hbn. August 13 to September 8 more adults of the leaf-eating caterpillar have emerged on C. rosea. This caterpillar is very harmful to C. rosea. (October 8.)

A cicadellid, Cicadella areolata Sign., is usually found on arrowroot, but does little if any damage. It is a frequent visitor to bean plants and also feeds on caiba (Cyclanthera pedata Schrad., fam. Cucurbitaceae), San Pedro de Montes de Oca. On a young tree in Paso Ancho de San Sebastian the tender young leaves of orange were injured by it. C. areolata is also found on pitanga (Eugenia uniflora), August 13 to September 8. This insect feeds on the leaves of aguacatillo (Phoebe tonduzii), a tree we are trying out as a stock for avocado, but the insect is not important, San Pedro de Montes de Oca. It has been taken on dahlia at Naranja; feeds on the leaves of malacca pear (Eugenia malaccensis) without doing much damage. (October 8.)

Cicadella pardalina Fowl. feeds upon the leaves of malacca pear without doing much damage. It is injurious on tender shoots of pear, and breeds on poro (Erythrina rubrinervia). October 8. This insect is also found on cashew, but is never abundant. It is a pest of some importance on quince. (August 13 to September 8.)

A cicadellid, Gyocna vulnerata Walk., does some damage on tender tips of apple at San Pedro de Montes de Oca, and frequently feeds on Casuarina equisetifolia L. It also attacks cherimoya, dahlia, lemon, orange, pear, pecan, and soursop. September 9. This insect feeds on the tender shoots of avocado, but appears to do little damage to coffee in San Pedro de Montes de Oca and Paso Ancho de San Sebastian, and is not very harmful on orange. (October 8.)

A membracid, Stictoccephala festina Say, is a frequent visitor to red clover, San Pedro de Montes de Oca, September 9.

Membracis mexicana Guer. is frequently found on apple, but appears to do little damage. It is found on camellia, usually found on Dovyalis hebecarpa Warb., and occasionally on guachipelin (Diphysa robinoides Benth.). It is fre-

quently found on Melaleuca leucadendron L. It is also found on pecan, plum, rose, soursoy (which appears to be a favorite host plant), and ylang-ylang. San Pedro de Montes de Oca, August 13 to September 8. M. mexicana is doing little if any damage to coffee; it feeds upon the leaves of malacca pear without doing much damage; also on boro (Erythrina rubrinervia), which is used as a shade for coffee and for living fence posts; it breeds on ylang-ylang. San Pedro de Montes de Oca.

Monocophora bicincta Say, a cercopid found on para grass, is not very abundant and appears to do less damage at San Pedro de Montes de Oca than in the Cauca Valley of Colombia or in Camaguey, Cuba, where it is a pest of prime importance.

Saissetia hemisphaerica Targ. is found on cosnos and Cycas revoluta; it is especially harmful just now (September 8) on tender new growth of lemon, a serious pest on orange, appears to be the worst pest on pitanga (Eugenia uniflora), and is an important pest on Poncirus trifoliata and abiu (Pouteria cainito Radlk.), a valuable fruit; San Pedro de Montes de Oca.

Saissetia oleae Bern. attacks cherimoya, San Pedro de Montes de Oca. It does but little damage to Mandarin orange, is not very harmful to orange, is harmful to Poncirus trifoliatus, and scarce on leaves of ylang-ylang.

Pseudococcus citri Risso is not very important on grapefruit at San Pedro de Montes de Oca, but is a serious pest on orange.

At San Pedro de Montes de Oca, Aleurocanthus woglumi Ashby. is found on lemon; present on mango, but not important; a serious pest on orange. It is found on pitanga (Eugenia uniflora) but is not important. It is on lime in Tres Rios. Adults of the citrus blackfly gather in numbers on the tender new leaves of Ceiba pentandra to feed. It is present on coffee but not abundant at San Pedro de Montes de Oca and Paso Ancho de San Sebastian. The insect feeds on the leaves of Malacca pear (E. malaccensis) without doing much damage, San Pedro de Montes de Oca. Adults are abundant on leaves of mulberry at Naranja. It is a serious pest on orange.

Selenaspidus articulata Morg. on orange from Liberia, Province of Guanacaste. I have not seen this scale in the Meseta Central. (August 13 to September 8.)

Lepidosaphes beckii Newm. is found on lemon at San Pedro de Montes de Oca; it is a serious pest on orange.

Lepidosaphes gloveri Pack. is a serious pest on orange at San Pedro de Montes de Oca.

Aulacaspis pentagona Targ. is always bad on mulberry (M. rubra), also harmful on Hibiscus mutabilis L. and peach. This insect is serious on an Excelsior plum tree in San Pedro de Montes de Oca, October 8.

Ischnaspis longirostris Sign. causes yellowing and death of vines on isolated plants of Asparagus sprengeri at Paso Ancho de San Sebastian and San Jose, Oct. 8.

A homopterous insect, Aethalion quadratum Fowl., is sometimes found in colonies on the branches and twigs of avocado. The females deposit a mass of eggs over which they remain until hatched. When the colonies are large they cause de-



pressions and other malformations in the bark of the branch where they feed. San Pedro de Montes de Oca, August 13 to September 8.

At the American legation in San Jose Aethalion reticulatum L. was rather abundant on ylang-ylang and had caused sunken areas in the bark of the areas where it fed. It is found on orange and peach, and also feeds on Dovyalis hebecarpa Warb. at San Pedro de Montes de Oca, August 13 to September 8. A. reticulatum L. breeds on poro (Erythrina rubrinervia) which is used as a shade for coffee and for living fence posts.

A lace bug, Corythucha gossynii Fab., injured the leaves of soursoap. The insect not abundant. August 13 to September 8. This bug marred a large part of the foliage of soursoap. San Pedro de Montes de Oca, October 8.

INSECT CONDITIONS IN GUATEMALA DURING JUNE AND JULY, 1931

Marston Bates

12 Calle Oriente No. 1, Guatemala City

Trionymus sacchari Oehl. was taken July 7, at an elevation of 5,000 ft. at Antigua. (Det. H. Morrison.)

Pseudococcus citri Risso, with its attendant ant Solenopsis geninata Fab. and the ladybeetle Hyperaspis bicrucata Muls., was found infesting coffee on June 15 at an elevation of 5,000 feet at San Sebastian Reu. (Det. Morrison, W. M. Mann, E. A. Chapin.)

A species of Eriococcus, apparently undescribed, and near E. cockerellii Essig and E. turcinciae Laig., was found at an elevation of 3,000 feet infesting guava (Psidium guajava) on June 2, at Guatalon. (Det. Morrison.)

Echinicerya anomala Morr. was found lightly infesting a few citrus trees on June 15 at an elevation of 3,000 ft. at San Sebastian Reu. (Det. Morrison.)

Chrysomphalus dictyospermi Morg. was found infesting rose on June 15 at San Sebastian Reu. (Det. Morrison.)

Icerya purchasi Mask. was taken from rose at an elevation of 5,000 ft. at Guatemala City. (Det. Morrison.)